



SEQUENCE LISTING

RECEIVED

AUG 08 2002

FBI CENTER 16

<110> Liu, Qingyun
 McDonald, Terrence
 Bonnert, Timothy P.
 Ng, Gordon
 Kolakowski, Lee F., Jr.
 Clark, Janet
 Bonner, Tom I.

<120> NOVEL GABAB RECEPTOR DNA SEQUENCES

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| | | | | | | | | | | | | | | | |
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| Leu | Ile | Val | Leu | Ser | Tyr | Gly | Ser | Ser | Ser | Pro | Ala | Leu | Ser | Asn | Arg |
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| Asn | Gln | Thr | Ile | Thr | Asp | Gln | Ile | Tyr | Arg | Ala | Met | Asn | Ser | Ser | Ser |
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| Phe | Glu | Gly | Val | Ser | Gly | His | Val | Val | Phe | Asp | Ala | Ser | Gly | Ser | Arg |
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| Ile | Gly | Tyr | Tyr | Asp | Ser | Thr | Lys | Asp | Asp | Leu | Ser | Trp | Ser | Lys | Thr |
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| Asp | Lys | Trp | Ile | Gly | Gly | Ser | Pro | Pro | Ala | Asp | Gln | Thr | Leu | Val | Ile |
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| Leu | Ser | Ser | Leu | Gly | Ile | Val | Leu | Ala | Val | Val | Cys | Leu | Ser | Phe | Asn |
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| Tyr | Gly | Ser | Met | Phe | Thr | Lys | Ile | Trp | Trp | Val | His | Thr | Val | Phe | Thr |
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 Asp Leu Arg Leu Tyr Asp Thr Glu Cys Asp Asn Ala Lys Gly Leu Lys
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| | | | | | | | | | | | | | | | | | | |
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| Asn | Ala | Val | Asn | 165 | Pro | Ala | Ile | Leu | Lys | 170 | Leu | Leu | Lys | His | 175 | Tyr | Gln | Trp |
| Lys | Arg | Val | Gly | 180 | Thr | Leu | Thr | Gln | 185 | Asp | Val | Gln | Arg | Phe | 190 | Ser | Glu | Val |
| Arg | Asn | Asp | Leu | 195 | Thr | Gly | Val | 200 | Tyr | Gly | Glu | Asp | Ile | Glu | Ile | Ser | | |
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| Lys | Gly | Asn | Asp | 225 | Val | Arg | Ile | Ile | Leu | Gly | Gln | Phe | Asp | Gln | Asn | Met | | |
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| Gln | Val | His | Thr | 275 | Glu | Ala | Asn | Ser | 280 | Ser | Arg | Cys | Leu | Arg | Lys | Asn | Leu | |
| Leu | Ala | Ala | Met | 290 | Glu | Gly | Tyr | Ile | Gly | Val | Asp | Phe | Glu | Pro | Leu | Ser | | |
| Ser | Lys | Gln | Ile | 305 | Lys | Thr | Ile | Ser | Gly | Lys | Thr | Pro | Gln | Gln | Tyr | Glu | | |
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| Phe | Asn | Tyr | Thr | 370 | Asp | His | Thr | Leu | Gly | Arg | Ile | Ile | Leu | Asn | Ala | Met | | |
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| Glu | Val | Lys | Val | 420 | Gly | Glu | Tyr | Asn | 425 | Ala | Val | Ala | Asp | Thr | Leu | Glu | Ile | |
| Ile | Asn | Asp | Thr | 435 | Ile | Arg | Phe | Gln | 440 | Gly | Ser | Glu | Pro | Pro | Lys | Asp | Lys | |
| Thr | Ile | Ile | Leu | 450 | Glu | Gln | Leu | Arg | 455 | Lys | Ile | Ser | Leu | Pro | Leu | Tyr | Ser | |
| Ile | Leu | Ser | Ala | 465 | Leu | Thr | Ile | Leu | 470 | Gly | Met | Ile | Met | Ala | Ser | Ala | Phe | |
| Leu | Phe | Phe | Asn | 485 | Ile | Lys | Asn | Arg | 490 | Asn | Gln | Lys | Leu | Ile | Lys | Met | Ser | |
| Ser | Pro | Tyr | Met | 500 | Asn | Asn | Leu | Ile | 505 | Leu | Gly | Gly | Met | Leu | Ser | Tyr | | |
| Ala | Ser | Ile | Phe | 515 | Leu | Phe | Gly | Leu | 520 | Asp | Gly | Ser | Phe | Val | Ser | Glu | Lys | |
| Thr | Phe | Glu | Thr | 530 | Leu | Cys | Thr | Val | 535 | Arg | Thr | Trp | Ile | Leu | Thr | Val | Gly | |
| Tyr | Thr | Thr | Ala | 545 | Phe | Gly | Ala | Met | 550 | Phe | Ala | Lys | Thr | Trp | Arg | Val | His | |
| Ala | Ile | Phe | Lys | 565 | Asn | Val | Lys | Met | 570 | Lys | Lys | Lys | Ile | Ile | Lys | Asp | Gln | |
| Lys | Leu | Leu | Val | 580 | Ile | Val | Gly | Gly | 585 | Met | Leu | Leu | Ile | Asp | Leu | Cys | Ile | |
| Leu | Ile | Cys | Trp | 595 | Gln | Ala | Val | Asp | 600 | Pro | Leu | Arg | Arg | Thr | Val | Glu | Lys | |
| Tyr | Ser | Met | Glu | 610 | Pro | Asp | Pro | Ala | 615 | Gly | Arg | Asp | Ile | Ser | Ile | Arg | Pro | |
| Leu | Leu | Glu | His | 625 | Cys | Glu | Asn | Thr | 630 | His | Met | Thr | Ile | Trp | Leu | Gly | Ile | |
| Val | Tyr | Ala | Tyr | 645 | Lys | Gly | Leu | Leu | 650 | Met | Leu | Phe | Gly | Cys | Phe | Leu | Ala | |

| | | | | | | | | | | | | | | | | | |
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| | | 675 | | | | | 680 | | | | | 685 | | | | | |
| Ile | Gly | Met | Ser | Val | Tyr | Asn | Val | Gly | Ile | Met | Cys | Ile | Ile | Gly | Ala | | |
| | 690 | | | | | 695 | | | | | 700 | | | | | | |
| Ala | Val | Ser | Phe | Leu | Thr | Arg | Asp | Gln | Pro | Asn | Val | Gln | Phe | Cys | Ile | | |
| 705 | | | | 710 | | | | | 715 | | | | | | 720 | | |
| Val | Ala | Leu | Val | Ile | Ile | Phe | Cys | Ser | Thr | Ile | Thr | Leu | Cys | Leu | Val | | |
| | | | 725 | | | | | | 730 | | | | | 735 | | | |
| Phe | Val | Pro | Lys | Leu | Ile | Thr | Leu | Arg | Thr | Asn | Pro | Asp | Ala | Ala | Thr | | |
| | | | 740 | | | | | 745 | | | | | 750 | | | | |
| Gln | Asn | Arg | Arg | Phe | Gln | Phe | Thr | Gln | Asn | Gln | Lys | Lys | Glu | Asp | Ser | | |
| | | 755 | | | | 760 | | | | | | 765 | | | | | |
| Lys | Thr | Ser | Thr | Ser | Val | Thr | Ser | Val | Asn | Gln | Ala | Ser | Thr | Ser | Arg | | |
| | 770 | | | | | 775 | | | | | 780 | | | | | | |
| Leu | Glu | Gly | Leu | Gln | Ser | Glu | Asn | His | Arg | Leu | Arg | Met | Lys | Ile | Thr | | |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 | | |
| Glu | Leu | Asp | Lys | Asp | Leu | Glu | Glu | Val | Thr | Met | Gln | Leu | Gln | Asp | Thr | | |
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| Pro | Glu | Lys | Thr | Thr | Tyr | Ile | Lys | Gln | Asn | His | Tyr | Gln | Glu | Leu | Asn | | |
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| Asp | Ile | Leu | Asn | Leu | Gly | Asn | Phe | Thr | Glu | Ser | Thr | Asp | Gly | Gly | Lys | | |
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| Ala | Ile | Leu | Lys | Asn | His | Leu | Asp | Gln | Asn | Pro | Gln | Leu | Gln | Trp | Asn | | |
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| Thr | Thr | Glu | Pro | Ser | Arg | Thr | Cys | Lys | Asp | Pro | Ile | Glu | Asp | Ile | Asn | | |
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| Ser | Pro | Glu | His | Ile | Gln | Arg | Arg | Leu | Ser | Leu | Gln | Leu | Pro | Ile | Leu | | |
| | | | 885 | | | | | | 890 | | | | | 895 | | | |
| His | His | Ala | Tyr | Leu | Pro | Ser | Ile | Gly | Gly | Val | Asp | Ala | Ser | Cys | Val | | |
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Gln Val Lys Ala Ile Asn Phe Leu Pro Val Asp Tyr Glu Ile Glu Tyr
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Val Cys Arg Gly Glu Arg Glu Val Val Gly Pro Lys Val Arg Lys Cys
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Arg Ile Cys Ser Lys Ser Tyr Leu Thr Leu Glu Asn Gly Lys Val Phe
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145 150 155 160
Thr Pro His Ser Glu Arg Arg Ala Val Tyr Ile Gly Ala Leu Phe Pro
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Met Ser Gly Gly Trp Pro Gly Gly Gln Ala Cys Gln Pro Ala Val Glu
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| | | | | | | | | | | | | | | | |
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| Thr | Lys | Tyr | Leu | Tyr | Glu | Leu | Leu | Tyr | Asn | Asp | Pro | Ile | Lys | Ile | Ile |
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| Leu | Met | Pro | Gly | Cys | Ser | Ser | Val | Ser | Thr | Leu | Val | Ala | Glu | Ala | Ala |
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| Glu | Ala | Pro | Leu | Ala | Tyr | Asp | Ala | Ile | Trp | Ala | Leu | Ala | Leu | Ala | Leu |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Asn | Lys | Thr | Ser | Gly | Gly | Gly | Gly | Arg | Ser | Gly | Val | Arg | Leu | Glu | Asp |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Phe | Asn | Tyr | Asn | Asn | Gln | Thr | Ile | Thr | Asp | Gln | Ile | Tyr | Arg | Ala | Met |
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| Asn | Ser | Ser | Ser | Phe | Glu | Gly | Val | Ser | Gly | His | Val | Val | Phe | Asp | Ala |
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| Ser | Tyr | Lys | Lys | Ile | Gly | Tyr | Tyr | Asp | Ser | Thr | Lys | Asp | Asp | Leu | Ser |
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| Trp | Ser | Lys | Thr | Asp | Lys | Trp | Ile | Gly | Gly | Ser | Pro | Pro | Ala | Asp | Gln |
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| Thr | Leu | Val | Ile | Lys | Thr | Phe | Arg | Phe | Leu | Ser | Gln | Lys | Leu | Phe | Ile |
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| Leu | Ser | Phe | Asn | Ile | Tyr | Asn | Ser | His | Ala | Arg | Tyr | Ile | Gln | Asn | Ser |
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| Thr | Val | Phe | Thr | Lys | Lys | Glu | Glu | Lys | Lys | Glu | Trp | Arg | Lys | Thr | Leu |
| | 690 | | | | | 695 | | | | | 700 | | | | |

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 740 745 750
 Ile Leu Pro Gln Leu Glu His Cys Ser Ser Lys Lys Met Asn Thr Trp
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 770 775 780
 Phe Leu Ala Tyr Glu Thr Lys Ser Val Ser Thr Glu Lys Ile Asn Asp
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 35 40 45
 Asp Gln Val Lys Ala Ile Asn Phe Leu Pro Val Asp Tyr Glu Ile Glu
 50 55 60
 Tyr Val Cys Arg Gly Glu Arg Glu Val Val Gly Pro Lys Val Arg Lys
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 Cys Leu Ala Asn Gly Ser Trp Thr Asp Met Asp Thr Pro Ser Arg Cys
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 Val Arg Ile Cys Ser Lys Ser Tyr Leu Thr Leu Glu Asn Gly Lys Val
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 Phe Leu Thr Gly Gly Asp Leu Pro Ala Leu Asp Gly Ala Arg Ala Asp
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 Arg Thr Pro His Ser Glu Arg Arg Ala Val Tyr Ile Gly Ala Leu Phe
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 Pro Met Ser Gly Gly Trp Pro Gly Gly Gln Ala Cys Gln Pro Ala Val

| | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|--|-----|--|--|--|
| | | | 180 | | | | | | | | 185 | | | | | | | | 190 | | | |
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| Ala | Thr | Lys | Tyr | Leu | Tyr | Glu | Leu | Leu | Tyr | Asn | Asp | Pro | Ile | Lys | Ile | | | | | | | |
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| Ile | Leu | Met | Pro | Gly | Cys | Ser | Ser | Val | Ser | Thr | Leu | Val | Ala | Glu | Ala | | | | | | | |
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| Ala | Arg | Met | Trp | Asn | Leu | Ile | Val | Leu | Ser | Tyr | Gly | Ser | Ser | Ser | Pro | | | | | | | |
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| Ala | Leu | Ser | Asn | Arg | Gln | Arg | Phe | Pro | Thr | Phe | Phe | Arg | Thr | His | Pro | | | | | | | |
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| Ser | Ala | Thr | Leu | His | Asn | Pro | Thr | Arg | Val | Lys | Leu | Phe | Glu | Lys | Trp | | | | | | | |
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| Gly | Trp | Lys | Lys | Ile | Ala | Thr | Ile | Gln | Gln | Thr | Thr | Glu | Val | Phe | Thr | | | | | | | |
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| Ser | Thr | Leu | Asp | Asp | Leu | Glu | Glu | Arg | Val | Lys | Glu | Ala | Gly | Ile | Glu | | | | | | | |
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| Ile | Thr | Phe | Arg | Gln | Ser | Phe | Phe | Ser | Asp | Pro | Ala | Val | Pro | Val | Lys | | | | | | | |
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| Asn | Leu | Lys | Arg | Gln | Asp | Ala | Arg | Ile | Ile | Val | Gly | Leu | Phe | Tyr | Glu | | | | | | | |
| | | | | | | | 360 | | | | | 365 | | | | | | | | | | |
| Thr | Glu | Ala | Arg | Lys | Val | Phe | Cys | Glu | Val | Tyr | Lys | Glu | Arg | Leu | Phe | | | | | | | |
| | | | | | | 375 | | | | | 380 | | | | | | | | | | | |
| Gly | Lys | Lys | Tyr | Val | Trp | Phe | Leu | Ile | Gly | Trp | Tyr | Ala | Asp | Asn | Trp | | | | | | | |
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| Phe | Lys | Ile | Tyr | Asp | Pro | Ser | Ile | Asn | Cys | Thr | Val | Asp | Glu | Met | Thr | | | | | | | |
| | | | | 405 | | | | | 410 | | | | | 415 | | | | | | | | |
| Glu | Ala | Val | Glu | Gly | His | Ile | Thr | Thr | Glu | Ile | Val | Met | Leu | Asn | Pro | | | | | | | |
| | | | | 420 | | | | | 425 | | | | | 430 | | | | | | | | |
| Ala | Asn | Thr | Arg | Ser | Ile | Ser | Asn | Met | Thr | Ser | Gln | Glu | Phe | Val | Glu | | | | | | | |
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| Lys | Leu | Thr | Lys | Arg | Leu | Lys | Arg | His | Pro | Glu | Glu | Thr | Gly | Gly | Phe | | | | | | | |
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| Gln | Glu | Ala | Pro | Leu | Ala | Tyr | Asp | Ala | Ile | Trp | Ala | Leu | Ala | Leu | Ala | | | | | | | |
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| Leu | Asn | Lys | Thr | Ser | Gly | Gly | Gly | Gly | Arg | Ser | Gly | Val | Arg | Leu | Glu | | | | | | | |
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| Asp | Phe | Asn | Tyr | Asn | Asn | Gln | Thr | Ile | Thr | Asp | Gln | Ile | Tyr | Arg | Ala | | | | | | | |
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| Gly | Ser | Tyr | Lys | Lys | Ile | Gly | Tyr | Tyr | Asp | Ser | Thr | Lys | Asp | Asp | Leu | | | | | | | |
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| Gln | Thr | Leu | Val | Ile | Lys | Thr | Phe | Arg | Phe | Leu | Ser | Gln | Lys | Leu | Phe | | | | | | | |
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| | | | | 595 | | | 600 | | | | | 605 | | | | | | | | | | |
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| Gly | Phe | Ser | Leu | Gly | Tyr | Gly | Ser | Met | Phe | Thr | Lys | Ile | Trp | Trp | Val | | | | | | | |

| | | | | | | | | | | | | | | | | | |
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| Thr | Ile | Glu | Thr | Phe | Ala | Lys | Glu | Glu | Pro | Lys | Glu | Asp | Ile | Asp | Val | | |
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| Ser | Ile | Leu | Pro | Gln | Leu | Glu | His | Cys | Ser | Ser | Arg | Lys | Met | Asn | Thr | | |
| | 755 | | | | | 760 | | | | | | 765 | | | | | |
| Trp | Leu | Gly | Ile | Phe | Tyr | Gly | Tyr | Lys | Gly | Leu | Leu | Leu | Leu | Leu | Gly | | |
| | 770 | | | | | 775 | | | | | 780 | | | | | | |
| Ile | Phe | Leu | Ala | Tyr | Glu | Thr | Lys | Ser | Val | Ser | Thr | Glu | Lys | Ile | Asn | | |
| 785 | | | | | 790 | | | | | 795 | | | | | 800 | | |
| Asp | His | Arg | Ala | Val | Gly | Met | Ala | Ile | Tyr | Asn | Val | Ala | Val | Leu | Cys | | |
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| Leu | Ile | Thr | Ala | Pro | Val | Thr | Met | Ile | Leu | Ser | Ser | Gln | Gln | Asp | Ala | | |
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| Ala | Phe | Ala | Phe | Ala | Ser | Leu | Ala | Ile | Val | Phe | Ser | Ser | Tyr | Ile | Thr | | |
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| Leu | Val | Val | Leu | Phe | Val | Pro | Lys | Met | Arg | Arg | Leu | Ile | Thr | Arg | Gly | | |
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| Glu | Trp | Gln | Ser | Glu | Ala | Gln | Asp | Thr | Met | Lys | Thr | Gly | Ser | Ser | Thr | | |
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| | | | 885 | | | | | 890 | | | | | | 895 | | | |
| Glu | Leu | Glu | Lys | Ile | Ile | Ala | Glu | Lys | Glu | Glu | Arg | Val | Ser | Glu | Leu | | |
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| Pro | Thr | Pro | Pro | Glu | Pro | Ser | Gly | Gly | Leu | Pro | Arg | Gly | Pro | Pro | Glu | | |
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| Pro | Pro | Asp | Arg | Leu | Ser | Cys | Asp | Gly | Ser | Arg | Val | His | Leu | Leu | Tyr | | |
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| Thr | Glu | Ala | Ala | Glu | Tyr | His | Phe | Thr | Thr | Glu | Ser | Val | Met | Leu | Ser |
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| Glu | Ser | Leu | Phe | Pro | Leu | Leu | Cys | His | Ala | Arg | Val | Thr | Ile | Leu | Leu | | |
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| Leu | Val | Thr | Ala | Pro | Val | Val | Thr | Leu | Leu | Ile | His | Gly | Lys | Val | Asp | | |
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| Gly | Val | Met | Ser | Lys | Val | Asp | Gln | Lys | Arg | Tyr | Asp | Met | Leu | Lys | Lys | | |
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| Lys | Asn | His | Phe | Ser | Val | Glu | Phe | Ala | Leu | Thr | Arg | Arg | Asp | Val | Asp |
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| Thr | Lys | Ile | Val | Gly | Asn | Thr | Val | Ser | Pro | Tyr | Val | Thr | Leu | Asn | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Phe | Gln | Arg | Ala | Gly | Asp | Val | Trp | Asn | Glu | Ile | Thr | Gln | Leu | Asp | Pro |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Asn | Asn | Thr | Trp | Arg | Gly | Tyr | Leu | Tyr | Asp | Gly | Leu | Trp | Thr | Leu | Ala |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Ile | Ala | Leu | Ser | His | Ser | Met | Gly | Asp | Asn | Ala | Glu | Phe | Ser | His | His |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Lys | Met | Met | Glu | Ala | Ile | Asp | Asn | Ser | Ser | Phe | Gln | Gly | Leu | Thr | Gly |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Lys | Val | Lys | Phe | Ala | Asn | Asn | Glu | Arg | Leu | Gly | Leu | Val | Asp | Ile | Lys |
| | | | 325 | | | | | | 330 | | | | | 335 | |
| Gln | Trp | Ser | Asp | Gly | Gln | Tyr | Val | Pro | Phe | Ala | Val | Tyr | Asp | Gly | Ala |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Asp | Asp | Glu | Phe | Lys | Ile | Ile | Asp | Ser | Thr | Thr | Lys | Gly | Trp | Ser | Pro |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Pro | Leu | Asp | Ser | Thr | Ile | Thr | Glu | Arg | Arg | Arg | Glu | His | Ile | Ser | Ser |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Ile | Leu | Phe | Leu | Ala | Met | Ser | Leu | Leu | Ala | Leu | Ile | Gly | Ile | Phe | Leu |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Ala | Leu | Ile | Phe | Leu | Leu | Ile | Asn | Phe | Arg | Tyr | Arg | Asn | His | Arg | Phe |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Ile | Lys | Met | Ser | Ser | Pro | Asn | Leu | Asn | Asn | Ile | Ile | Ile | Ala | Gly | Ser |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Ile | Cys | Thr | Phe | Ala | Ser | Val | Ile | Met | Leu | Gly | Leu | Asp | Thr | Arg | Ile |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Val | Ser | Pro | Asp | Val | Phe | Val | Trp | Leu | Cys | Tyr | Thr | Lys | Thr | Trp | Thr |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Leu | Cys | Ile | Gly | Phe | Thr | Leu | Ser | Phe | Gly | Ala | Met | Phe | Ser | Lys | Thr |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Trp | Arg | Val | His | Ser | Ile | Phe | Thr | Asn | Ile | Arg | Met | Asp | Arg | Lys | Ala |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Ile | Lys | Asp | Ser | Lys | Leu | Phe | Ile | Ile | Leu | Gly | Ile | Leu | Leu | Phe | Ile |
| | | | 500 | | | | | 505 | | | | | 510 | | |

Asp Ile Cys Val Leu Val Thr Trp Ala Phe Val Ser Pro Phe Ser Tyr
 515 520 525
 Thr Val Glu Gln Phe Lys Phe Leu Ile Phe Ser Ala Arg Arg Asn Ile
 530 535 540
 Val Ile Ile Pro Glu Val Glu Lys Cys Asn Ser Ser His Ser Gly Val
 545 550 555 560
 Phe Gln Ala Val Leu Tyr Ala Val Lys Gly Val Leu Met Ile Leu Gly
 565 570 575
 Cys Phe Leu Ala Trp Glu Thr Arg His Val Asn Val Pro Ala Leu Asn
 580 585 590
 Asp Ser Lys Tyr Ile Gly Thr Ser Val Tyr Cys Cys Val Val Met Ser
 595 600 605
 Val Leu Gly Leu Ser Thr Ser Val Ile Leu Gln Glu Arg Val Asn Glu
 610 615 620
 Met Phe Ser Leu Ala Ser Phe Phe Val Ile Phe Ser Thr Thr Leu Thr
 625 630 635 640
 Leu Cys Leu Val Phe Val Pro Lys Val Arg Phe Leu Glu Leu Cys Cys
 645 650 655
 Ile Gly Ser

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 <212> PRT
 <213> Homo Sapiens

<400> 44
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 Ser Ser Gln Arg Ser Val Ala Arg Met Asp Gly Asp Val Ile Ile Gly
 35 40 45
 Ala Leu Phe Ser Val His His Gln Pro Pro Ala Glu Lys Val Pro Glu
 50 55 60
 Arg Lys Cys Gly Glu Ile Arg Glu Gln Tyr Gly Ile Gln Arg Val Glu
 65 70 75 80
 Ala Met Phe His Thr Leu Asp Lys Ile Asn Ala Asp Pro Val Leu Leu
 85 90 95
 Pro Asn Ile Thr Leu Gly Ser Glu Ile Arg Asp Ser Cys Trp His Ser
 100 105 110
 Ser Val Ala Leu Glu Gln Ser Ile Glu Phe Ile Arg Asp Ser Leu Ile
 115 120 125
 Ser Ile Arg Asp Glu Lys Asp Gly Ile Asn Arg Cys Leu Pro Asp Gly
 130 135 140
 Gln Ser Leu Pro Pro Gly Arg Thr Lys Lys Pro Ile Ala Gly Val Ile
 145 150 155 160
 Gly Pro Gly Ser Ser Ser Val Ala Ile Gln Val Gln Asn Leu Leu Gln
 165 170 175
 Leu Phe Asp Ile Pro Gln Ile Ala Tyr Ser Ala Thr Ser Ile Asp Leu
 180 185 190
 Ser Asp Lys Thr Leu Tyr Lys Tyr Phe Leu Arg Val Val Pro Ser Asp
 195 200 205
 Thr Leu Gln Ala Arg Ala Met Leu Asp Ile Val Lys Arg Tyr Asn Trp
 210 215 220
 Thr Tyr Val Ser Ala Val His Thr Glu Gly Asn Tyr Gly Glu Ser Gly
 225 230 235 240
 Met Asp Ala Phe Lys Glu Leu Ala Ala Gln Glu Gly Leu Cys Ile Ala
 245 250 255
 His Ser Asp Lys Ile Tyr Ser Asn Ala Gly Glu Lys Ser Phe Asp Arg
 260 265 270
 Leu Leu Arg Lys Leu Arg Glu Arg Leu Pro Lys Ala Arg Val Val Val

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| Cys | Phe | Cys | Glu | Gly | Met | Thr | Val | Arg | Gly | Leu | Leu | Ser | Ala | Met | Arg | |
| | 290 | | | | | 295 | | | | | 300 | | | | | |
| Arg | Leu | Gly | Val | Val | Gly | Glu | Phe | Ser | Leu | Ile | Gly | Ser | Asp | Gly | Trp | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| Ala | Asp | Arg | Asp | Glu | Val | Ile | Glu | Gly | Tyr | Glu | Val | Glu | Ala | Asn | Gly | |
| | | | | 325 | | | | | 330 | | | | | 335 | | |
| Gly | Ile | Thr | Ile | Lys | Leu | Gln | Ser | Pro | Glu | Val | Arg | Ser | Phe | Asp | Asp | |
| | | | 340 | | | | | 345 | | | | | 350 | | | |
| Tyr | Phe | Leu | Lys | Leu | Arg | Leu | Asp | Thr | Asn | Thr | Arg | Asn | Pro | Trp | Phe | |
| | | 355 | | | | | 360 | | | | | 365 | | | | |
| Pro | Glu | Phe | Trp | Gln | His | Arg | Phe | Gln | Cys | Arg | Leu | Pro | Gly | His | Leu | |
| | 370 | | | | | 375 | | | | | 380 | | | | | |
| Leu | Glu | Asn | Pro | Asn | Phe | Lys | Arg | Ile | Cys | Thr | Gly | Asn | Glu | Ser | Leu | |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| Glu | Glu | Asn | Tyr | Val | Gln | Asp | Ser | Lys | Met | Gly | Phe | Val | Ile | Asn | Ala | |
| | | | | 405 | | | | | 410 | | | | | 415 | | |
| Ile | Tyr | Ala | Met | Ala | His | Gly | Leu | Gln | Asn | Met | His | His | Ala | Leu | Cys | |
| | | | 420 | | | | | 425 | | | | | 430 | | | |
| Pro | Gly | His | Val | Gly | Leu | Cys | Asp | Ala | Met | Lys | Pro | Ile | Asp | Gly | Ser | |
| | | 435 | | | | | 440 | | | | | 445 | | | | |
| Lys | Leu | Leu | Asp | Phe | Leu | Ile | Lys | Ser | Ser | Phe | Ile | Gly | Val | Ser | Gly | |
| | 450 | | | | | 455 | | | | 460 | | | | | | |
| Glu | Glu | Val | Trp | Phe | Asp | Glu | Lys | Gly | Asp | Ala | Pro | Gly | Arg | Tyr | Asp | |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 | |
| Ile | Met | Asn | Leu | Gln | Tyr | Thr | Glu | Ala | Asn | Arg | Tyr | Asp | Tyr | Val | His | |
| | | | | 485 | | | | | 490 | | | | | 495 | | |
| Val | Gly | Thr | Trp | His | Glu | Gly | Val | Leu | Asn | Ile | Asp | Asp | Tyr | Lys | Ile | |
| | | | 500 | | | | | 505 | | | | | 510 | | | |
| Gln | Met | Asn | Lys | Ser | Gly | Val | Val | Arg | Ser | Val | Cys | Ser | Glu | Pro | Cys | |
| | | 515 | | | | 520 | | | | | 525 | | | | | |
| Leu | Lys | Gly | Gln | Ile | Lys | Val | Ile | Arg | Lys | Gly | Glu | Val | Ser | Cys | Cys | |
| | 530 | | | | | 535 | | | | | 540 | | | | | |
| Trp | Ile | Cys | Thr | Ala | Cys | Lys | Glu | Asn | Glu | Tyr | Val | Gln | Asp | Glu | Phe | |
| 545 | | | | | 550 | | | | | 555 | | | | | 560 | |
| Thr | Cys | Lys | Ala | Cys | Asp | Leu | Gly | Trp | Trp | Pro | Asn | Ala | Asp | Leu | Thr | |
| | | | | 565 | | | | | 570 | | | | | 575 | | |
| Gly | Cys | Glu | Pro | Ile | Pro | Val | Arg | Tyr | | | | | | | | |
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<210> 45
<211> 369
<212> PRT
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| Met | Lys | Arg | Asn | Ala | Lys | Thr | Ile | Ile | Ala | Gly | Met | Ile | Ala | Leu | Ala | | |
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| Ile | Ser | His | Thr | Ala | Met | Ala | Asp | Asp | Ile | Lys | Val | Ala | Val | Val | Gly | | |
| | | | 20 | | | | | 25 | | | | | 30 | | | | |
| Ala | Met | Ser | Gly | Pro | Ile | Ala | Gln | Trp | Gly | Ile | Met | Glu | Phe | Asn | Gly | | |
| | | 35 | | | | | 40 | | | | | 45 | | | | | |
| Ala | Glu | Gln | Ala | Ile | Lys | Asp | Ile | Asn | Ala | Lys | Gly | Gly | Ile | Lys | Gly | | |
| | 50 | | | | | 55 | | | | | 60 | | | | | | |
| Asp | Lys | Leu | Val | Gly | Val | Glu | Tyr | Asp | Asp | Ala | Cys | Asp | Pro | Lys | Gln | | |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 | | |
| Ala | Val | Ala | Val | Ala | Asn | Lys | Ile | Val | Asn | Asp | Gly | Ile | Lys | Tyr | Val | | |
| | | | | 85 | | | | | 90 | | | | | 95 | | | |
| Ile | Gly | His | Leu | Cys | Ser | Ser | Ser | Thr | Gln | Pro | Ala | Ser | Asp | Ile | Tyr | | |
| | | | 100 | | | | | 105 | | | | | 110 | | | | |
| Glu | Asp | Glu | Gly | Ile | Leu | Met | Ile | Ser | Pro | Gly | Ala | Thr | Ala | Pro | Glu | | |
| | | 115 | | | | | 120 | | | | | 125 | | | | | |

Leu Thr Gln Arg Gly Tyr Gln His Ile Met Arg Thr Ala Gly Leu Asp
 130 135 140
 Ser Ser Gln Gly Pro Thr Ala Ala Lys Tyr Ile Leu Glu Thr Val Lys
 145 150 155 160
 Pro Gln Arg Ile Ala Ile Ile His Asp Lys Gln Gln Tyr Gly Glu Gly
 165 170 175
 Leu Ala Arg Ser Val Gln Asp Gly Leu Lys Ala Ala Asn Ala Asn Val
 180 185 190
 Val Phe Phe Asp Gly Ile Thr Ala Gly Glu Lys Asp Phe Ser Ala Leu
 195 200 205
 Ile Ala Arg Leu Lys Lys Glu Asn Ile Asp Phe Val Tyr Tyr Gly Gly
 210 215 220
 Tyr Tyr Pro Glu Met Gly Gln Met Leu Arg Gln Ala Arg Ser Val Gly
 225 230 235 240
 Leu Lys Thr Gln Phe Met Gly Pro Glu Gly Val Gly Asn Ala Ser Leu
 245 250 255
 Ser Asn Ile Ala Gly Asp Ala Ala Glu Gly Met Leu Val Thr Met Pro
 260 265 270
 Lys Arg Tyr Asp Gln Asp Pro Ala Asn Gln Gly Ile Val Asp Ala Leu
 275 280 285
 Lys Ala Asp Lys Lys Asp Pro Ser Gly Pro Tyr Val Trp Ile Thr Tyr
 290 295 300
 Ala Ala Val Gln Ser Leu Ala Thr Ala Leu Glu Arg Thr Gly Ser Asp
 305 310 315 320
 Glu Pro Leu Ala Leu Val Lys Asp Leu Lys Ala Asn Gly Ala Asn Thr
 325 330 335
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 Asp Phe Gly Val Phe Gln Trp His Ala Asp Gly Ser Ser Thr Ala Ala
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 Lys

<210> 46
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 35 40 45
 Tyr Asp Asp Ala Cys Asp Pro Lys Gln Ala Val Ala Val Ala Asn Lys
 50 55 60
 Val Val Asn Asp Gly Ile Lys Tyr Val Ile Gly His Leu Cys Ser Ser
 65 70 75 80
 Ser Thr Gln Pro Ala Ser Asp Ile Tyr Glu Asp Glu Gly Ile Leu Met
 85 90 95
 Ile Thr Pro Ala Ala Thr Ala Pro Glu Leu Thr Ala Arg Gly Tyr Gln
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 Leu Ile Leu Arg Thr Thr Gly Leu Asp Ser Asp Gln Gly Pro Thr Ala
 115 120 125
 Ala Lys Tyr Ile Leu Glu Lys Val Lys Pro Gln Arg Ile Ala Ile Val
 130 135 140
 His Asp Lys Gln Gln Tyr Gly Glu Gly Leu Ala Arg Ala Val Gln Asp
 145 150 155 160
 Gly Leu Lys Lys Gly Asn Ala Asn Val Val Phe Phe Asp Gly Ile Thr
 165 170 175
 Ala Gly Glu Lys Asp Phe Ser Thr Leu Val Ala Arg Leu Lys Lys Glu

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | | | 180 | | | | | 185 | | | | 190 | | | | |
| Asn | Ile | Asp | Phe | Val | Tyr | Tyr | Gly | Gly | Tyr | His | Pro | Glu | Met | Gly | Gln | |
| | | 195 | | | | | 200 | | | | | 205 | | | | |
| Ile | Leu | Arg | Gln | Ala | Arg | Ala | Ala | Gly | Leu | Lys | Thr | Gln | Phe | Met | Gly | |
| | 210 | | | | | 215 | | | | | 220 | | | | | |
| Pro | Glu | Gly | Val | Ala | Asn | Val | Ser | Leu | Ser | Asn | Ile | Ala | Gly | Glu | Ser | |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| Ala | Glu | Gly | Leu | Leu | Val | Thr | Lys | Pro | Lys | Asn | Tyr | Asp | Gln | Val | Pro | |
| | | | 245 | | | | | | 250 | | | | | 255 | | |
| Ala | Asn | Lys | Pro | Ile | Val | Asp | Ala | Ile | Lys | Ala | Lys | Lys | Gln | Asp | Pro | |
| | | | 260 | | | | | 265 | | | | | 270 | | | |
| Ser | Gly | Ala | Phe | Val | Trp | Thr | Thr | Tyr | Ala | Ala | Leu | Gln | Ser | Leu | Gln | |
| | | 275 | | | | | 280 | | | | | 285 | | | | |
| Ala | Gly | Leu | Asn | Gln | Ser | Asp | Asp | Pro | Ala | Glu | Ile | Ala | Lys | Tyr | Leu | |
| | 290 | | | | | 295 | | | | | 300 | | | | | |
| Lys | Ala | Asn | Ser | Val | Asp | Thr | Val | Met | Gly | Pro | Leu | Thr | Trp | Asp | Glu | |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| Lys | Gly | Asp | Leu | Lys | Gly | Phe | Glu | Phe | Gly | Val | Phe | Asp | Trp | His | Ala | |
| | | | 325 | | | | | | 330 | | | | | 335 | | |
| Asn | Gly | Thr | Ala | Thr | Asp | Ala | Lys | | | | | | | | | |
| | | | 340 | | | | | | | | | | | | | |